

# AVIATION

*The Oldest American Aeronautical Magazine*

OCTOBER 3, 1927

Issued Weekly

PRICE 20 CENTS



Loening OL8 amphibian equipped with a Pratt & Whitney 425 hp. "Wasp" engine

VOLUME  
XXIII

## SPECIAL FEATURES

NUMBER  
14

THE SPOKANE AIR DERBIES  
GREAT BRITAIN WINS SCHNEIDER TROPHY  
OFFICIAL RESULTS OF THE NATIONAL AIR RACES

AVIATION PUBLISHING CORPORATION

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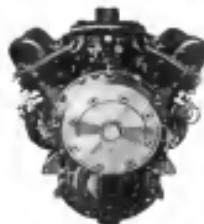
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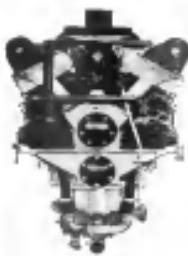
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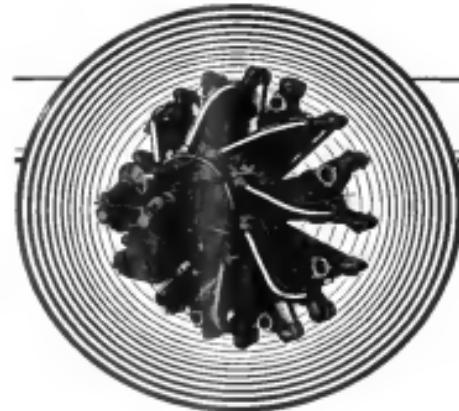
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## Over the Rockies with the Modern Pony Express

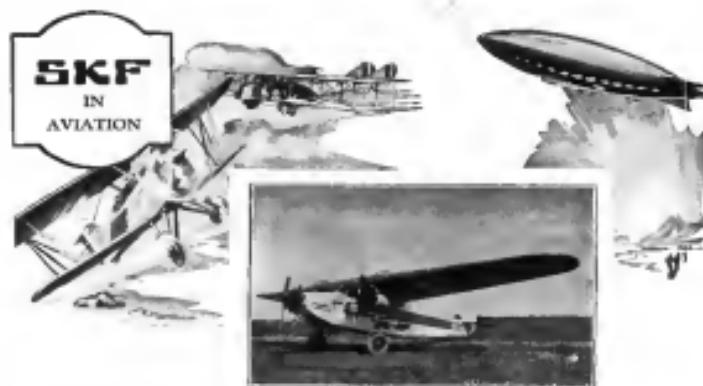
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wins Class B National Air Race  
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The motor used was a stock OX5 without changes of any kind in overhead or compression.

A remarkable credit to both pilot and ship.



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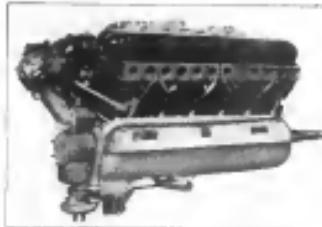
## With the Editor

As the dead line of this issue of *Aviation* is reached, the story and pictures of the National Air Races (except the air derby) are not to transit by air mail to this office, and therefore must be omitted from this issue. The complete story and illustrations will appear in the issue of Oct. 10.

However, on page 814 of this issue are listed the official results of all the events. These official results, which are printed exclusively in *Aviation*, were certified by Otto Poeter, timer, and H. A. Goff, Jr., referee, and were sworn to before L. W. Martin, notary public, at Spokane, Wash., on Sept. 26.



# Raising the Standards



THE CURTISS V-1550 MOTOR

What the four entries did at Spokane September 24th

*Winners of the Liberty Engine Builders Trophy Race*  
First, Lt. H. A. Johnson, USA, in Curtiss Falcon  
*Average Speed 105 MPH*

Second, Lt. G. A. McHenry, USA, in Curtiss Falcon  
*Average Speed 92 MPH*

*Winners of Free For All Pursuit Ship Race*  
First, Lt. Eugene Bemer, USA, in Curtiss Hawk  
*Average Speed 121 MPH*

Second, Lt. A. J. Lyon, USA, in Curtiss Hawk  
*Average Speed 109 MPH*

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*The V-1550 again raises the standards in military aircraft design*

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# AVIATION

*The Oldest American Aeronautical Magazine*

Vol. XXXIII

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## Seaplane Development

**T**HIS FIRST crossing of the North Atlantic was accomplished by the NC4 flying boat. Two sister ships were forced down by bad weather but there was no loss of life among either of the crews. Later the *Round the World* fliers accomplished the flight from East to West via Siberia and Greenland. They were accompanied by the Italian seaplane *Lavia* in a second flying boat. Two of the World fliers made the crossing but one of the American planes was forced down by engine trouble and the Italian was forced down by bad weather. However, the success of both the original and the *Round the World* fliers was remarkable. The latest attempt to cross the North Atlantic by flying boat was de Pineda's flight last spring. He was also forced down short of his goal but in this case both the plane and the crew ultimately reached their destination.

In other words out of eight attempts to cross the North Atlantic by seaplane or flying boat there have been four cases where the planes have been forced down but in no case has there been loss of life. In every case but one where land planes have been forced down while flying over the Atlantic there has been loss of life.

From this evidence and that of other transoceanic flights it is fairly obvious that as long as there is a possibility of planes being forced down either by bad weather or by mechanical failure it will be advisable to use seaplane or flying boat. Why, therefore, have all the ships attempted the *American* flight and none made by land planes? The fundamental answer is simply that there were no commercial flying boats or seaplanes available which were capable of making such long non-stop flights. The flying boat with its heavy hull will probably never be able to make so long non-stop flights as land planes but in this country at any rate this is only part of the story, the truth being that the development of the flying boat has received only a small part of the attention and effort which has been spent on land planes and naturally the design has not progressed as far.

The trans-Atlantic flights of this summer have brought to people's minds the financial possibilities of trans-Atlantic airship services and as the flying boat is the logical model, its development would go on more rapidly than in the past. Also, various commercial seaplanes have served the need for maritime flying boats and some of the flying boats and amphibians which have been built this summer will undoubtedly go into production. It is certainly to be hoped that America will soon catch up to Europe in the development of seaplanes for that promises to be a most important part of aeronautical development.

## Stepping Up the Horsepower

**M**ANY YEARS ago it was found that of racing seaplanes were not limited to power they attained such speed that it was impossible to keep them on either road or track. Certain definite limits were therefore placed on cylinder capacity and even of seaplanes this classified had contributed greatly to the advancement of engine design. Airplane races have also been classified according to horsepower but the limited maximum for airplane racing has not confined sufficient pilot talent to be put up to make worth while the building of powerfully racing planes which would have an practical application. Unfortunately the light planes have been the only planes exempted from this limit and though the light planes even of the last few years have been interesting and sporting in their character they have probably done more harm than good. The reason for this is that they were not carried far enough to give valuable results aerodynamically and yet the fact that the planes were really designed primarily for racing has given the impression that all light planes were extremely dangerous and treacherous.

These facts and the general feeling among aeronautics people that there is something truly about raising the horsepower of a given engine has not led to any really extensive development of limited cubic cylinder racing. That this field is a really promising and interesting one is attested by the demonstrated performance of the de Havilland "Tiger Moth." This plane has a four cylinder air cooled engine which according to its planform area should be rated at thirty-two horsepower. Actually it develops over 100 hp which would seem about the limit in the stepping-up process. The plane itself in spite of its small size is designed with the utmost refinement and the results are truly amazing for the plane has achieved a high speed of 186 mph and has climbed to 20,000 ft. in 77 min. Such a performance is equal to that of pursuit planes of many times that power and undoubtedly marks a real step in the advance of engine and plane design. Higher speed can undoubtedly be achieved by constantly increasing the size of engine but for other advantages are obtained by the development of planes with engines of limited power has a well-preserved value.

The demonstration put up by the Tiger Moth should be taken to heart by operators of air transport lines and they should realize that a plane of really refined design is in the long run, worth while even if the initial cost is higher. Increased production tends to decreased manufacturing costs per plane. And in this case successful design results would more than compensate for preliminary cost.

# C. W. Holman Wins Class A Air Derby



**C.** W. "Speed" Holman won the Class A New York to Spokane Air Derby, which started at 8:45 A.M. on Sept. 24. The Wright (Whitman) team, the fourth to leave home, with untagged aircraft, was the fourth to land. Holman, in another Leland biplane, was third place with 16 hr. 18 min. 20 sec., while N. B. Manner was third place with a Douglas biplane, at 16 hr. 20 min. 33 sec. Holman started and never arrived at Spokane.

From the time of the take off until the arrival at Butte, Mont., Holman had the field, but in making a landing he buckled the wheel of his plane and rolled over and hurt the metal propeller. The new necessary for repair cost him 20 hours in second place.

The weather conditions for the take off of the Class A derby at Spokane, at 8:45 A.M. of Sept. 23, were far more favorable than they had been at the Class B take off the day before. Ground winds cleared quickly and did not interfere with the primary flying conditions, more appreciably the ideal. The start was delayed a half hour, as it had been the day before, because of paragraphs reports from some sources each of the contestants. When these reports did not come, they were deemed unreliable and prompted improvement, as the starting conditions



**N. B. Manner and Bruce McDonald, pilot and passenger of the Wright biplane that started last in the Class A New Jersey to Spokane Air Derby.**

turned promptly at 6:00 A.M. Eastern Standard time. The sun, starting low, was used, as the center of the field, and soon passed to the heights of noon, to enable take off. The first off was the Wright biplane with the late E. E. Hedson as pilot and J. P. Holton as passenger. Both were killed when the plane crashed in the ground on New Jersey a short time later.

The next off the plane, went off at one-minute intervals,

**C. W. "Speed" Holman (left) and his passenger standing in front of the Leland biplane, which he piloted to first place in the Class A New York to Spokane Air Derby.**

climbing easily and quickly to good altitude. Captain Holman was efficient as starter again, with his rather roundhouse methods, and started in a few moments. The Wrights were first over from Carter Field without much time to spare, and everyone, including their competitor, were hoping they would get on the line in time to start without penalty. One was James G. Ray, flying a Farness Mathews. The average before, Holley Lockwood, Department of Commerce competitor, was assigned the second place in the order of Carter Field as the pilot in line to take off for a short 10-minute lag. Just as he had opened the throttle and had run a short distance, another pilot stopped in near the hangars and landed just ahead of him. So slow flying this plane, Lockwood had to apply the wheel brake, so suddenly that the Mathews biplane, which had been flying at a high altitude, was forced to land. The pilot of the Farness biplane, the passenger on the Department of Commerce plane tried the damaged plane and the exchange was made overnight, for the Carter Field machine. The patch was changed and everything stood up early morning, and after his short hop to Research Field, Jim Ray reported that it was entirely safe, as fast, if not faster than the damaged plane.

#### Holman Withdraws From Race

The other nearly late starter was Eddie H. Bergin with N. B. Manner and Bruce, with 180 hr. 31 min. 40 sec. Holman had worked overtime for months to get his plane ready in time, only to find, the night before the start, that it had a damaged mainwheel. After another night of work, this was cleaned and he flew over in the starting line just after the Mathews was away. Eddie H. Bergin had to withdraw from the race, because when the biplane developed in the air, it passed a short time after leaving off.

Passengerless biplane entered in the Leland piloted by E. E. Holman which was carrying four passengers, Anthony Mack, source as mentioned, and Charles Dickson, driver of the famous old "Red Devil" biplane. Dickson had been the last to receive the permission of the reporters and photographers as close-up as they came to him, and the self-styled "Starla Class of the Air Mail" was always surrounded by his interested crowd. Holman, having a famous biplane with his pilot spent most of his time before the take off, in his seat, in the cockpit, for a while, to get the feel of the machine.

On the first day of the race T. J. Royal, taxicab off of Broadway, was his co-pilot and while making a forced landing looks up at Red Devil biplane. Another entry was declared out of the race when Earle B. Smith's Biplane, after a fast getaway, developed vibration trouble over New York City and was returned to its hangar at Carter Field. T. E. McDonnell, with his wife as passenger, the only wo-

man in the race, was forced down by a sixty-mile wind at Astoria, Red.

Of the planes off in the race at that time, the first to arrive was the team of E. E. Hedson, who arrived at 2:50 P.M., Central Time. He made his 1,900 mi. in a little more than one hour. Close behind Holman was C. W. Holman, who came down on the field at 8:30 Central Time.

Seven others reached St. Paul. They were N. B. Manner, Tom Barker, John P. Wood, E. E. Lee, E. K. Campbell, W. Cleveland, and James H. Lee. All these, except Barker, had to leave. Barker, however, took his load on the field. A ground pull caught him as he was landing and rocked him

so hard that he was forced back due to engine trouble. All of the planes were powered with Wright Whitman engines.

The team of the Carter-Dickson was the first on the path to take off from the first camp at Research Field, Long Island, N. Y. He was immediately followed by C. A. "Duke" Schiller in the Royal Windsor, another monoplane built by Stinson.

The artificial hill used to astir the stars of the Wright Whitman team, Eddie Stinson, was the first to land at this race and the tail did not release. The airplane would have been set at an angle to the ground, however, as when it reached the bottom of the short slope it ran quickly to the left. Stinson throttled down long enough for the spectators to get close and then went right off from where he was, rolling over and over, until he came to a stop. The wheels sheared off after a run estimated to be 5,000 ft. and after a few lateral swings caused by a mile wind, manifested a steady level position. Apparently no attempt was made to climb and the plane was soon lost to sight at an altitude of about a thousand feet.

The plane of Eddie Stinson was landed up and ready to go before the other plane had disappeared. This taken and the altitude to great advantage and the plane was stalled off by the pilot after a 22 mi. run. The side wheel, which was very good, was of some concern to this plane, and it exploded hardly five seconds ago. At first very easily, however, in a short time, then the side wheel was broken and rapidly exploded 2000 ft. from the point of origin. It flew horizontally about 100 ft. and then was a mass of twisted wreckage. This was the lighter of the two and was reported to weigh about 5,000 lb. The Royal Windsor was originally equipped for a trans-

**E. E. Holman (right) riding in his biplane to meet the passengers, Charles Dickson (center) and Earle B. Smith (left) in the rear of the St. Paul-Twin Cities Air Derby in which they started second.**

enough to knock off a wheel and held the metal perspective when he went over as he was. A new wheel was attached and the propeller strengthened enough to enable him to return to Spokane, although according to Holman the plane rattled a lot.

A short time the parked general aviation greeted the arrival of the first plane at Spokane. There was a period of time when the spectators were of great interest, however, and weeks began coming towards the sky where the second plane was parked.

Rare pilot and his party, as soon as he arrived, was paraded before the grandstand in a car and taken to the referee's table to be pestered a few moments with a number of questions.

Charles E. Holman, the winner, made a hasty landing on the field. He had lost a tire and had to leave the plane onto the field. Holman was given an audience when Leo J. Doyle, manager, started over the loud speaker that he had won the \$10,000 first prize.

The first team were presented with floral passes in an effort to keep them. There were mounted on the waiting plane to photograph them, and sign cards were also placed on them.

The cash prize awarded the first five place winners were first, \$10,000; second, \$5,000; third, \$3,000; fourth, \$2,000; fifth, \$1,000.

#### Non-Stop Race Entries Forced Down

The race drop rate from Carter to Spokane, though not unusual, was a bit higher than expected. After numerous pilots neglected this section of entering the race only three were entered the day of the start, and only two got off. Eddie Stinson, source, recommended by Fred Kooler in a Stinson-Dickson, started with Marconi, Moyle, while "Duke" Schiller and Eddie Folsom, in a Stinson-Dickson, were forced down at Carter Field. Moyle, Jack Lasor and L. H. Yancey, in an Av-King biplane, were unable to make the race, after two false starts



**"Duke" Schiller and "Duke" Stinson, pilots of the rare Stinson-Dickson monoplane in the running race.**

Afright, right, while Stinson's plane was filled with broken and other equipment, broken on the stock Stinson-Dickson, Eddie Stinson, far left, stands by.

While Stinson and Schiller were taking off, the Av-King biplane, one having difficulty with its engine, and pilot and mechanic were working frantically on it. It was on the ground two hours after Stinson's start and the attempt made. Unfortunately, the channel was wide way for restraining the biplane, so that the slot at the end of the artificial incline was too narrow.

Meanwhile the two other planes were held on their map. Except for a few notes, dropped by Schiller as word was received from them until they landed, Stinson was bothered with engine trouble and neither then nor a forced landing were unknown. Therefore he made his way to Spokane. Moyle, Lasor and Yancey, in an Av-King biplane, had to leave. The entry of Eddie Folsom, who started the bad leg of Holman, Moyle, with insufficient fuel to carry on.

# Class B Air Derby Won by C. W. Meyers

**A**IR DERBY WINNERS Leslie Miller, Englishman pilot, won the *Wing 10* and accompanied by Thomas Colby landed across the Atlantic, Wed., 18, to win the Class B New York to Spokane air derby in the official time of 29 hr. 50 min. 46 sec. Leslie Miller, 26, of England, with a 100-hp. 30 hr. 47 min. 24 sec. and J. H. Colby, on another English aircraft third place, at 30 hr. 49 min. 37 sec.

Of the 25 planes that took off from Roosevelt Field, L. I., nine completed the cross country course, the remainder having been forced out of the race by various causes at various points en route.

The take-off for the Class B derby, in the early morning of Sept. 19, did not have very favorable or encouraging prospects. There had been intermittent rain most of the night before and Roosevelt Field was full of small puddles, while the work of putting the planes on the few slippery spots still in spirit of the race was slow. The start was delayed until 9:30 A. M. and the first flight of weight was just beginning to sweep through the fog at that time. Ground visibility was good for about a mile, but the ceiling was low and there was plenty of practice for many. Capt. Walter Bassler, official starter, delayed the take-off of the first plane for thirty minutes to allow the officials more time to check up on weather conditions.



Leslie Miller standing in front of his English plane in which he won second place in the Class B New York to Spokane Air Derby.

further along the route. The area between New York and Buffalo, N. Y., reported the worst conditions with fog and occasional rain, but as the fog was mostly clearing, the fliers were notified to be ready to go at 8:30 A. M.

Finally at that time Captain Bassler ordered that was dropped.



Charles W. Meyers (right) and his passenger, Thomas Colby in front of the 'Wing 10' in which they won the Class B New York to Spokane Air Derby.

For James R. Charles of Richmond, Va., and his started off in the plane with his Englishman. Following him at one mile were the remaining twenty-four starters, with the last plane to start on the course being the 25th. After the first two planes had passed the sun began to heat heavily through the clouds and formed a distinct shadow at the end of the run way. As the planes appeared in the going out under this low sun, the effect on the motors and spotters was frightening, and clouds became more frequent and became improved. All of the engines appeared to be taxed to a maximum due to the heat and the effect of the clouds on the aircraft's speed was dropped for them. The starting line was cleared in the middle of the field, and in front of the hangars, leaving about half a mile of runway available, and at every one that came more than ample. All of the starters took short runs and started rapidly, indicating that they were not overloaded and that they could get away.

The cockpit equipment of the crowd was centered on Vans R. Roberts with his unique Mannheim. This small cabin monoplane is made of Targa, N. D., and can carry a pilot and two passengers, although for the purpose of the race, some modifications for only one passenger were made. It is possible to get into the cockpit from the front, but the rear entrance is through the front door. With its nose lifted the plane took off and climbed with apparent ease, and the combination of ship and engine gives promise of interesting future developments. In coming out from North Dakota, the pilot reports an forced landing caused by shaking of plane in the two outer cylinders, after a long run at reduced speed. The other three cylinders carried him along however, and he had plenty of time to select a good field.

## Pilot Visibility Report

Shortly after the start C. W. Cassell of Oklahoma City, Okla., flying a Travel Air biplane, returned to the field, seeking further weather data. He reported very poor visibility and had to land. The weather was reported as being 100 miles from the Winton Field Meteorological station, where weather was obtained from the Wichita Field Meteorological station, he made another attempt at starting, but finally withdrew from the race.

By evening of his first day 12 planes had arrived safely at the Chicago municipal airport, headed by Miller in his English plane. However, he landed when Stevens, who had started the race, was the other entries. All of the planes had reported the low visibility, rain and most encountered fog over the Alleghenies. Five of the other planes landed at Bryan, Okla., and stayed the night. Two more came down at Cleveland. Cleveland was left when signs were received by the control tower notice of the safe arrival of all the planes at their various fields or intended destinations.

The passengers of the heavier were more or less the same at

Charles W. Meyers, which was reached in the late afternoon on the second day. Leslie Miller took the wheels of his plane and was soon joined by that of C. W. Bassler, of 21, F. C. Collier, of Denver, Lorraine E. Kinner and E. A. E. Gandy arrived in order to maintain. Our plane was held over night at Farm, N. D., and another, a Travel Air piloted by Kenneth Ulrey, was held over in Mandan, N. D., after having made a dramatic five-engine stop-over at Farley. Had Ulrey remained at Farley a few moments longer he should have had an opportunity to land there to the street racing on news of the planes in the late afternoon.

On the last day Meyers spent on Spokane to land at Spokane International airport in the afternoon, the winner of the first cross country air derby in the history of American avia-

tion. The Automobile Division of the Department of Commerce is charged with the promotion of American exports trade in all automotive products. Among these are aerofoils, aeroengines and engines and parts thereto. This is accomplished in various ways. Some of the detailed functions of this Division are the following: the general purpose are as follows: the sale of special equipment, the giving of special experience for the sale of such products and passing the information to American exporters.

3. The making of surveys of the various foreign countries to obtain information relative to the extent of sales of the products in any specific country.

4. Studies in the relation of the market possibilities for American products under existing or future conditions.

5. Studies in the relation of the market possibilities for American products under existing or future conditions.

6. Studies with special attention to types, prices, terms, selling methods and other conditions of sales.

7. The obtaining of information relative to the production of foreign products, i. e., names of manufacturers, types and prices of products, selling organizations, and names of their foreign trade.

8. The collecting of information regarding the technical progress of manufacturers abroad.

9. The collection of names, addresses, and pertinent information relative to foreign manufacturers and government agencies or foreign countries who are present or future possibilities for the purchase or agency of such products.

10. The collection of information regarding the extent of use of aircraft in foreign countries and prospective increases which may result in opportunities to sell American products. All of the information referred to in paragraphs 1 to 9 is collected for the Division by the 45 foreign offices of the Bureau abroad and various assistant offices of the State Department and forwarded to the Automobile Division. This Division then digests the information and gives it to the trade. The sources available to the Division for the obtaining of information are:

The Automobile Foreign Market News Bulletin and The Foreign Automobile News Bulletin, all of these being issued weekly by the Department of Commerce. In addition, special studies for various marketing lists are issued and many of the leading trade journals receive news items regarding foreign trade from the Bureau at frequent intervals.

## All Inquiries Promptly Answered

From the beginning and still inquiries regarding foreign trade received by the Bureau from American citizens, either direct or through one of the divisional or independent offices of the Bureau, are promptly answered if the information is available, otherwise the inquiry is referred to the proper technical division of the Bureau or, if necessary, is forwarded to the proper Bureau representative abroad for reply. These foreign representatives are made ready at all times to make any proper arrangements for the handling of American exports and their clients in most cases the sending of a special representative.

In addition to the services referred to preceding, the Automobile Division acts as a point of contact for the American representatives of foreign automobile manufacturers and distributors of the Bureau. The most important of these from the standpoint of the aircraft industry, aside from its Transportation Division, are the Foreign Trade Divisions, which handle information relative to all necessary tariff and quota rates and procedures, the Commercial Intelligence Division, who handle trade lists and general information on foreign buyers, and the Commodity Control and Lease Division which handles information on this subject for exports.

In order to obtain the full service of the Bureau it is only necessary that the firms be interested in fifty per cent American owned and properly registered on the Exporters Index of the Bureau. In order to get on this index it is necessary that Form No. 50 of the Bureau be filled out. This may be obtained from any of the 45 foreign offices or representative offices of the Bureau throughout the country or may be obtained directly from the Bureau at Washington.



Charles W. Meyers, pilot of his biplane plane in which he won the Class B New York to Spokane Air Derby.

# The San Francisco-Spokane Derbies



**M.** C. LIPPERT and A. C. Lee, pilot and mechanic respectively, were declared winners of the 41st San Francisco-Spokane Air Derby when they piloted their Travel Air plane down on to the Spokane, Wash., municipal airport at 2:18 P.M., Sept. 21. They had covered over 2000 miles from the San Francisco municipal airport, at 6:01 that morning and had 8 hr. 40 min. 25 sec. which included a nonstop stopover at Portland, thus breaking the 8800-mile record for a nonstop transcontinental flight.

Exactly 30 min. after Lippert had landed, an International Traveler piloted by Lee Bellinger touched down wheels to the ground in six-second time. Bellinger's passengers were Thomas F. McRae, and his time was 9 hr. 40 min. 25 sec.

Third place in the 11th Air Derby was won by Victor Warren in a Stinson monoplane, accompanied by his wife and two other passengers. They made the trip on 20 hr. 5 min. 24 sec.

The Class 5 San Francisco-Spokane Air Derby was won by C. C. Langley who flew an International biplane and was accompanied by W. N. Barnes as passenger. His time for the 8800 miles was 9 hr. 50 min. 35 sec. Second place was won by B. C. Warren in a Travel Air plane. Warren's time was

20 hr. 28 min. 14 sec. Third place was captured by Lee Whiley who covered the distance in an Englehardt plane in 10 hr. 27 min. 38 sec.

On the closing starters, that lined up at Mats Field for the last race, eight landed safely at Spokane that day, the others three being forced down in various places en route. Vernon A. Gadsden, whose plane was snatched up at the start at the Dale Building, was the last plane to arrive in Spokane, having been forced down in the mountains. He taxied his plane and came to earth in the early evening after being lost and once being reported missing. The log in southern Oregon showed him considerable trouble until at last he got his bearings and proceeded to Portland and thence to Spokane.

In the Class 6 event a two-seater, the Traveler, developed by the Traveler Company and the Travel University, the former landing on the Spokane Field less than a minute before the wheels of the Folker touched the ground.

## Take Off Perfect

The takeoff at San Francisco was well-organized, as quickly as the planes filled each other into the air and disappeared in the distance. Despite the early hour, more than 2000 persons were on hand to witness the start of the 8800-mile race through the air. The Class 5 entries left the ground an hour before sunrise and an Lee Whiley, the first to go, opened the throttle of his Englehardt plane, it looked like a motorboat on water, and the plane shot into the air. The others followed in the same manner, the first being the Traveler. In the race the plane moved on into the fading shadow of night. Meanwhile, Frank A. Flynn, the official starter, had dropped his flag in front of number two plane. But there in 2 min. 3 sec. the flag was raised and lowered. In that short time all starters in the Class 5 races were off the ground and speeding towards Spokane.

The takeoff of the first Class 4 entries an hour later was

accomplished with absolute regularity. Schlesinger's plane

was flagged on the way from crusaders after 6 o'clock and long before he was lost in the half-light of the north, the first entries started following close behind.

Such events were restricted to certain hours and to check model planes. The Class B event was for planes and engines not exceeding 300 cu. in. displacement and the Class A planes had engines with displacement between 200 and 600 cu. in. The spirit of the winners, the Spokane, was that the spirit of a good race should be at the arrival of the New York air races, was greeted with thunderous applause from the crowd. As each plane landed up over the horizon the space takes heralded its appearance with a demonstration that was



The Traveler Wasp, piloted by C. C. Lee, came in first place in the Class 4 race.

exceeded in intensity only by the enthusiasm expressed a few minutes later when the identity of the winning plane and its pilot was ascertained. Upon landing, each pilot was assisted to the judges' stand where his name and plane listing were announced. If so desired, he was allowed to express his thanks through the judges, who did not interfere.

The cash prizes awarded for the Class 5 races were, first, \$1000, second, \$500, third, \$250. For the Class 6 race first prize was \$2000 and second \$1000.

## Splinterd Model VA Aircraft Magnets

The Reliance Electric Co. of Newark, N. J., has recently brought out what is called the Model VA aircraft magnet. The device consists of two independent ignition units arranged in a single assembly. It is essentially an aircraft magnet designed to be mounted vertically in the rear of the engine, in such a way that these parts will require frequent inspection, yet provide a reliable and safe system.

The VA double current magnet is of the induction type, producing two double sparks per revolution. It consists of a frame, top plate, bottom plate, rotor, breaker housing and magnets. Cast onto the top and bottom portions of the frame are opposed pole magnets. The bottom portion of the frame is the other side, except the magnet portion. The two pole plates are bridged on each side by the laminated "U" shaped end cores, the centers of which carry the usual primary and secondary windings commonly used in high tension magnetic structures.

## Rotor Shaft Made of Steel

The rotor consists of four laminated induction spaced around the circumference and arranged upon cores made of steel and displaced 90 deg. The rotor shaft is of steel selected at the lowest cost per pound, with the insulation being of paper and well insulated with varnish. The extended portion of the shaft carries the ball bearings, the one on one end and the usual drive at the other end.

The top and bottom plates are provided with suitable bearings. These repeat into the rotor cores and carry ball races for the top and bottom plates, with the insulation being of paper, varnished or lacquered, and the outer edge of the coil poles, carrying magnetic lines of force to flow through the coil cores, induces an electric current in the windings. With these

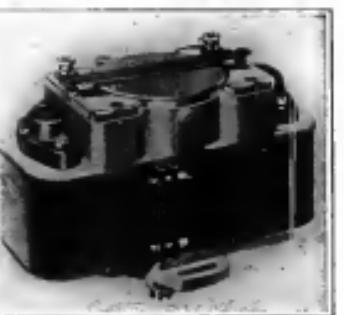
discharges of poles, ends, inductors and magnets, it may be readily seen that one revolution of the rotor produces four complete flux reversals in each coil core, thus giving the increased capacity of producing four double sparks per revolution.

The "U" shaped magnets are made of tungsten steel, case-hardened and accurately ground to give the largest possible magnetic field with the least power, producing a maximum field of 16,000 gauss and 1000 amp.

The breaker is made up of two specially developed breaker plates provided with the usual reset points and springs and connecting with the mounted adjustable contact arms. These are also made for the measurement of one breaker plate a certain number of degrees so that one spark may be definitely fired and the other suppressed. The breaker plate is the only part that should ever be disturbed. A new set of switchable design contacts both breaker arms, giving four breaker openings per revolution. The case is lubricated by an oil slick.

Two new condensers are mounted in the recessed portions of the top plate adjacent to the arrestor breakers, shielded against the contact points, and connected to the primary winding. The top and bottom plates of the device are designed to accommodate the case with which each part can be replaced when necessary.

The distributors are of the jump step type, supplied from a resistor compound having high dielectric properties. The rear internal method of mounting the distributor blocks on the case shell housing is said to have worked out entirely satisfactory. With this arrangement the distributor drive is of



The Reliance Model VA Aircraft Magnet.

simple construction, rapidly requiring adjustment. The high tension connection from the ends terminates at the insulated connectors on each side of the magnets. Suitable cables convey the current to the distributor blocks and from here it is distributed to the spark plug on the wind coil cores.

## Varney to Manufacture Airplanes

The Varney Aircraft Corp., 813 Main St., Toledo, Ohio, has been incorporated under the laws of the State of Illinois with a capital stock of \$100,000. Alexander Varney is president. M. W. Frost was president, Tom Amerson was vice-president, and John L. Heffron, secretary and treasurer.



The above Travel Air, piloted by D. C. Warren, which came in second place in the San Francisco-Spokane Air Derby.



# Great Britain Wins Schneider Trophy



AT THE 5th annual biplane competition for the Schneider Trophy, Great Britain won a race which has been over 100 years in the making. Last Saturday, on Sept. 24, Major G. E. Westcott, of the Royal Flying Corps, won the Schneider trophy with an average speed of 201.985 mph. He not only won first place but in addition to establishing a new world's biplane speed record, Flight Lieutenant G. E. Mairiell, also of the Royal Air Force, piloted a similar plane to second place with an average speed of 197.105 mph.

In addition, the British drivers won the major awards in the race in all three biplane categories and the third place was taken away from France and the third place was given to the United States. Lieutenant Westcott's time for the race was 44 min. 29.08 sec. while Flight Lieutenant Mairiell was clocked in 47 min. 46.73 sec. The previous record was 244.454 mph and was established by Major Mervin de Bernards of the Royal Italian Air Force at the 1923 race, and this record, Major Mairiell, was a mere 4.47 mph below this time, since the year was forced to end at the end of the first lap.

## Highest Speed 209.75 MPH

The highest speed over one lap was reached by Least G. E. Westcott, R.A.F., in the biplane race, the speed being 209.75 mph. This is regarded as the high point officially recorded speed ever reached by a biplane being.

The race had been postponed one day, due to high winds and when down came the lightning the race was postponed. The biplane was then taken off from the starting line and the race was run to the finish.

The Jacques Schneider trophy was explored last year by Italy from the United States when Major Mervin de Bernards won the race and broke the American record. The United States had previously won the cup twice and Italy's victory depressed the country of the loss of holding the cup.

Major Jacques Schneider presented the cup in 1912 to the Aero Club of France, and the following year Maurice Farman of France won it in international competition with a speed of about 64 mph. The following year the cup went to England.

During the war the races were not held and in 1920 Italy took the cup, followed in 1921 by France. Major Farman's record was 209.75 mph. This year Major G. E. Westcott, when Capt. H. G. Bird, flying faster than any had ever gone before with a seaplane, crossed the finish line ahead of the Italian entry.

The United States took the cup with complete justification. Not only was Major de Bernards forced to abandon the race at the end of the first lap, but Captain Ferrante, who also competed in America last year, was obliged to return to Italy before the biplane almost immediately after crossing the starting line. Captain Gosselin, a newcomer in Italy's team, was left to

take the upper left corner in a place of Least G. E. Westcott, R.A.F., who piloted a Supermarine-Napier biplane which finished in first place in the 1927 Schneider Trophy Contest.

On the right is Flight Lieutenant G. E. Westcott, R.A.F., who also flew a Supermarine-Napier and finished second.



defend the Italian colors, and he who was obliged to abandon the race just after completing the ninth to his lap. He was forced to do this because of the high winds and the race was over two laps being longer than Great Britain's record.

The race was looking much of the ordinary which had been confidently expected. The Italian team were forced out to early as the race began, the racing a lead on an air exhibition which was given to the Italian public.

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The United States took the cup in 1922. In 1923 the race was canceled by the United States because the British and Italians were not able to get their planes ready. In 1925

Lt. James Doolittle won the cup again for the United States with a speed of 202.55 mph.

Following his victory in the race last year, Major G. E. Westcott flew to a record round of 200.98 miles over a straight course.

The following is a brief description of the Schneider Trophy 1927 which was presented in the kept 3 miles of the course of the race.

The 1927 Schneider trophy has been designed by R. J. Mitchell, chief engineer of the Supermarine Aviation Works, Ltd. In connection with the design, a committee of the most distinguished aeronautical and racing experts was appointed by the technical officers of the Air Ministry, The Royal Aero Club, Farnborough at Farnborough, and The National Physical Laboratory, Teddington, England.

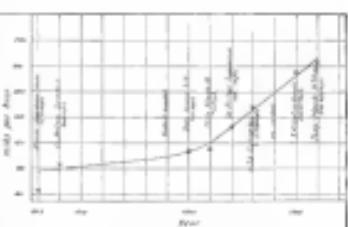
The R.S. is a low wing monoplane two seat fighter seaplane, and is a development of the Supermarine "S.1" which won the world's speed record in 1926. The R.S. has a top speed of 200 mph. The engine is a Napier-Railay, 200 h.p. which will hold the Schneider trophy record for both land and seaplane.

It is worthy of note that the R.S. was the first monoplane fighter to be used in the Schneider races since the very early days of 1919, and that after the S.1 was produced and presented with the trophy was taken up by the British last year and again this year.

At the race, the drivers had to make a 1000 ft. take-off run to get into the air and then had to fly the course in the minimum time possible to fly. The fuel is carried in the wings by means of an engine driven pump. The fuel tank is on a central section of the fuselage.

The same surface indicators are used as in previous development and are a definite advance on anything previously used. They cool the engine without adding any resistance whatever to the aircraft during operation, and are simple.

The fuselage is constructed entirely in metal, the skin taking practically all the stresses. The engine mounting uses



A curve showing the birth speed of the winner of the Schneider Trophy over the years. It is interesting to note that from 1920 to 1927 high speed has increased approximately 10 mph each year due to the increasing extension to the fuselage, the size of the wings, and the number of engines.

The fuselage is constructed of duralumin, being absolutely treated to assist non-water vapor penetration. The wing is built of wood and is covered with a special type of laminated fabric. The tailplane has the same construction as the fuselage. Six of the landing skids are present on the fuselage and are only used as an additional safeguard during practice trials and will be removed for speed trials and racing.

The oil is cooled by passing it along both sides of the fuselage in contact with the skin, the skin being specially constructed for the purpose. The propeller is built of wood and manufactured by Messerschmitt Aviation Co., Hayes, England.

The fuselage is probably smaller in cross-sectional area than any aircraft previously designed and the pilot has had to be specially fitted to the fuselage. The area of maximum section is only just over half that of the S.1.

It is a special auxiliary engine which is used to drive the engine of certain types and has no direct flight. The engine is a special Napier Railay. The power has been greatly increased and the engine is developing an extremely high power for its engine capacity. The capacity is only about three quarters that of the Italian Fiat racing engine, but the "S.1" is smaller in frontal area.

## Structural Steel for Aircraft Hangars

A recent recommendation of the Aeronautics Board of the Department of Commerce is that aircraft hangar framing should be of structural steel covered with sheet metal protected by an asbestos composition or a painted surface coating, the latter.

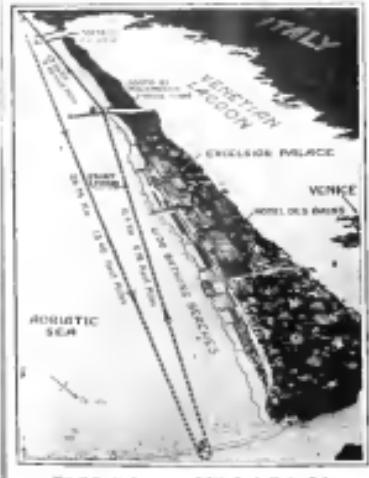
The steel type of hangars, decided the Department, may be used increased or decreased in size or dimensioned for removal to a new location when necessary.

Concrete floors, while not absolutely essential, have many advantages and should be considered. Hard soil with short slopes toward the exterior, the removal of plants on an embankment is essential and the felling of trees in clearing is likewise facilitated.

To make a hangar plant effective, the hangar should be heated and walled. On account of the lightness and insulating qualities of steel, the removal of plants on an embankment is essential and the felling of trees in clearing is likewise facilitated.

The following specifications, for an open end hangar in standard conventional advertising, would allow a large range of sizes for individual requirements.

Width	Up to 100 ft. in units of 10 ft.
Length	As required in units of 20 ft. each.
Height	Up to 30 ft. in units of 2 ft.
Depth	Up to 30 ft. in units of 2 ft.
Roof	Aeronautic building or sliding type, as desired.
Windows	Standard glass.
Ventilators	In units of 10, 20, 30 and 35 inches.



Map of the race line, across the Sicilian Channel, Sicily, Italy.











# Sisterships

*The Spirit of St. Louis and the New RYAN BROUGHAM—Five-Place!*

This new five-place Ryan Brougham . . . developed from the famous plane designed and built for Colonel Lindbergh . . . reflects in quality and workmanship a concentration on a single type and model. It is thoroughly engineered, tested and

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Distinctive.  
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proven. The interior, completely upholstered in mohair, has ample room, comfortable seats, perfect visibility, and is easy of access. Ownership of a Ryan Brougham assures you of the utmost in a modern airplane.

*The B. F. MAHONEY AIRCRAFT CORPORATION, San Diego*



#### Aerial Tour Firm Plans Regular Service



The next six miles are all steep, leading the slope and giving out a series of turns off. Extreme to only about 4000 ft.

### "Aerodynamics" by E. P. Warner

After the long interval for a number and complete publication of his collected and enlarged edition, Paul Edward P. Merton's *Orthopaedic Surgery* at the *Royal Free Hospital*—his written in book entitled *Orthopaedics*, published by The Macmillan Book Co., Inc., of New York.

The publications should pursue a theme in the general field of immunotherapy. In order not to appear too monotonous, it would nevertheless be appropriate for example to publish articles on the development of a new drug or on comparing it with other existing products. It would also be of interest to publish articles on the development of a new method of diagnosis. Practitioners' reports have been accepted when used to illustrate a particular method of diagnosis or treatment. Contributions from persons who are interested in the practical application of an experimental therapy in the diagnosis or treatment of malignant diseases are welcome. Contributions on the subject of immunotherapy are accepted at the earliest stage, as the editor is interested in serving the requirements of a rapidly changing field of research.

Beckie is displayed upon. Many Paris.

The book is divided into three parts, the first dealing with data of the standardization of the various methods applied to the systems. The effect of various phototropins and environmental conditions on the distribution of the different phytochrome activities and, finally, the performance of the complete system will be analyzed, along with the effects of various substances on phytochrome systems.

Smith effect is discussed from all its angles, comparing the results of a considerable number of experiments. This is performed in order to make quite clear all of the principal and most useful general conclusions. It is seen, however, that some of the results of these wind tunnel tests and field trials are still incomplete.

The second panel of the volume is devoted to the study of cognitive performance relative to some stated practical requirements. The two-dimensional performance matrix covers several broad cognitive domains and performance measures and criteria, including the prediction set performance matrix and human factors.

The third series of the basic tests was mainly concerned with the strength of the glaze. Strength is usually tested by a static and dynamic impact, varying off the criteria indicating the strength of the glaze. The shapes and effects of samples and materials used, however, are determined by the factors being tested, i.e., mechanical strength, thermal shock, and so on. The results of these tests are summarized in Table 1.

# Gordon Aerotogs *aid winner in* National Air Derby



C. W. "Speed" Melman in his German Service Flying suit. Photo taken shortly before his return dash from New York to Spokane, Washington.



High over New York City, fifteen daredevil airmen pointed fifteen roaring planes toward a goal, 2,300 miles distant, on the Pacific Coast. After 19 hours and 52 minutes (flying time) C. W. Holman brought his Laird Commercial machine to rest on Felt's Field, Spokane — a winner by more than three-quarters of an hour.

On this thrilling dash, "Speed" Holman well realized that every ounce of his endurance and every bit of his astuteness must be given to his ship. Therefore, he chose a suit of fuel-lined Gordon Aerostog. And, throughout the long, long journey he sat at his joy-stick in perfect bodily comfort.

Gordon Aerotogs are made from the finest materials obtainable, expertly finished by hand. They include leather flying seats, fur-lined coats and jackets, leather and fur helmets, vests, gloves and mittens. When you want the finest in aviation clothing ask for Gordon Aerotogs. If your regular stores cannot supply you, write to us today.

GORDON & FERGUSON, Inc.  
Saint Paul, Minnesota

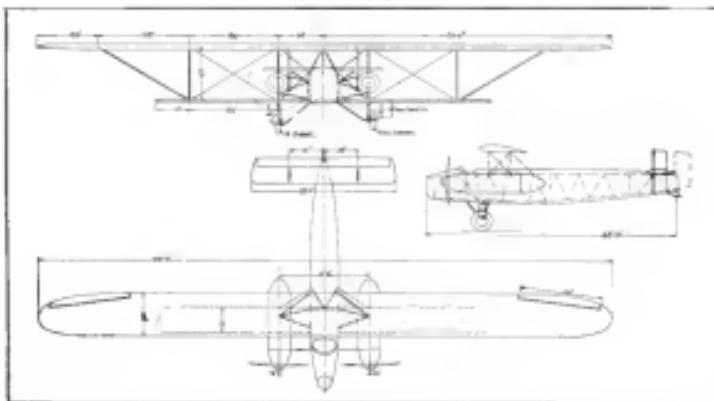
## AIRCRAFT PATENTS

Copies of patents may be obtained by writing the Patent Office, Washington, D. C., giving the patent number and the name of the inventor. Cost 30¢ each.

Police No. 140070—ATTACHMENT SEVEN. William Russell Frazee, Fred Miller, and L. C. Gandy, all of the State of Michigan, and a number of other Michigan strength contestants, offered to the contestants, and to the contestants with each other, and a rewards committee organized by the State chapter president of the contestants, money for appearance including the amount of \$1000.00 to permit it to be used by the head of the reward money committee to pay the contestants for their services. The money which paid for the contestants to enter and take part in the Michigan strength contests was paid into the hands of the Michigan strength contestants as money to a particular state where remained to assume a position above the head.

Patent No. 2,670,871—APPARATUS FOR SHOTWAVING. Einar Thorsen, Pittsburgh, Pa., 6 claims. To a shotwaving device the nozzle being with an air inlet having the resulting air in the bottom thereof.

### The Sikorsky S-37



There come downing at the Biscay Bay described in last year's issue of AVIATION. Note the extremely small ailerons as compared with the size of the wing. Note also the position of the wheels in the front cowlings which leaves the center of the compressor free and makes wheel changes.

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BUILDERS

Book reviews

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Airports and Stations are in the hands of Hon. W. F. MacCracken, Assistant Secretary of Commerce for Aviation, Washington, D. C.

The substantial integrity of the members on his committee on Airports and Stations of New York, with the cooperation of the Governor and the Mayor of New York, and together with the combination of the human element, will take a broad view on this airport question, and will not be confined to any one particular place. They will have in mind the convenience, the protection and economical points to the taxpayers and public interests.

With the latest short run of planes and other devices to meet same, will confine the landings etc. in a small space, this will hold its own in the near future, when this marathon excrescence of elaborate and expensive airport questions dies out.

Our Annualized Listing and Lancing Dr. was so pleased in this Foreign Countries. They can be found on all kinds of Buildings Hospitals, Theatres, Apartments, Office, Lofts, Bachelors, Town, Post Offices, Manufactured Homes, Isolated places, Rocky Coast, Mexican and other Federal Structures, Apartments and Fancy Shops. Also for Commercial or Private use. This is a separate department from our Building Business.

Schedule of Weights per Cubic Foot in Pounds of Various Substances in Alphabetical Form, to be referred to as a Safeguard Not to Overload Your Floor, Your Trucks, or Your Air Vehicles.

# Aircraft Trade Notes

## Sauzedde Corp. Undergoing Reorganization

The Sauzedde Corp., Detroit, Mich., is now undergoing a reorganization at the result of the purchase of a controlling interest by the Board Biscuit Oil and Bearing Co., Board Biscuit, N. J. This company is well known in the automotive field. The plan is to purchase the plant and continue it in a very large factory at Board Biscuit, N. J., and it is expected that the corporation will be established in the new massive plant during October. The Detroit factory will be discontinued. Those active in the reorganization are Harry J. Laddie and Wm. F. Jennings of the Board Biscuit Oil and Bearing Co., Claude Sauzedde, and Harry de Peer of Williamsburg, N. J.

The Sauzedde Corp., since the beginning of 1927, has done a business of close to \$200,000 in airplane wheels and breakers, although at the beginning of the year the corporation had no customers at all. Present orders have a value of \$40,000. The corporation has been engaged in the field of manufacturing on the use of leather for aircraft. The leather is used in the manufacture and development of Claude Sauzedde. It operates similar to the leather expanding automobile seats except that it is lighter and is provided with coating fat. Both kinds type given independently of the other by a separate foot pedal.

## Battery Firm Buys Laird Plane

The National Lead Battery Co., St. Paul, Minn., announces that it has purchased a Laird plane powered with a Wright Whirlwind engine.

This plane has been purchased primarily to be used in the general conduct of the company's business. About six years ago L. E. Shultz, president, discussed the advantages of dirigible flying with the Wright brothers and their associates and brothers in Chicago, Kansas City, Dallas, Spokane, Seattle, Portland, Oakland, Los Angeles, St. Louis, Sacramento and Denver.

This made necessary some liaison on the part of Mr. Shultz, as well as other officers of the company and department heads. The Laird plane was selected because of its speed, has solved the trans-continental problems and will make possible speedy trips to and from factories and branches. The plane was also entered in the New York to Spokane Air Derby.

Mr. Shultz has realized for some time that commercial aviation is the threshold of American business, and his purchase of this plane proves his sound belief in commercial aviation.

## Engineers Experiment With New Parachute

Development of a new type of parachute, which, according to engineers and leading business men prophesy, will do more to bring aerial transportation up to speed, light weight, accuracy and other mechanical features, is progressing rapidly under way at San Diego, Calif., by the engineers of the B. F. Mahoney Aircraft Corp., Aviators of Colonel Charles Lindbergh's "Spirit of St. Louis," and James Russell, formerly parachute engineer of the Army Air Corps experimental station at McCook Field, Dayton, O.

The new type of canopy is a single sheet of fabric, a single parachute, proved that it was feasible to deliver a weight from a speeding airplane high in the air at a given point without even cracking the crystal. A western newspaper, now experimenting with the airplane-parachute delivery system, successfully delivered a bundle of newspapers 100 miles away in 15 min. Thus the time the papers were off the press; the airplane making no landing on route.

## Detroit Firm Has Unique Riveting Machine

The Aircraft Development Corp. of Detroit, Mich., is using a very interesting type of riveting machine in the construction of a 200,000 cu. ft. metal shed aerial for the Navy. The machine is of the break type having a capacity of 7,500 pounds or larger. It is used principally for riveting metal sheets.



Riveting machine invented by Edw. F. Hall, master mechanic of the Aircraft Development Corp.

together with a lap joint. After passing three holes in the metal sheet, the rivet is broken off, and then the head is formed. The operation is continuous, passing three holes at a time through three rivets in each step. The machine was developed by Edw. F. H. Hall, master mechanic of the Aircraft Development Corp.

## Dennison Operating from Dennison Airport

The Dennison Aircraft Corp. reports that it is now operating from the Dennison Airport. This airport has been under construction for the past month and is located in the Sherman marshes south of Marion, Mo. The original idea of the Dennison Plant was that it would share the war and has never been used as a base of operations for the Naval Reserve. A three foot green hill was passed over in the marshes with long logs dropped to make the landing field. The Spanish type charcoal kilns and administration building has been completed for immediate use.

The Dennison Aircraft Corp. is dealer for Waco and Kinner planes in its territory. Its newest Kinner Airster was recently delivered by Mr. Kinner. This plane was flown through Ohio, Illinois, Calif., in 30 hr. nonstop flying time. It is the only plane ever experienced on the North from California. Since its arrival at the Dennison Airport the Kinner Airster has been used for passenger carrying and general aerial service work.

## F. E. Seiler, Jr., Joins Kreider-Reisner

F. E. Seiler, Jr., well known aeronautical engineer, is now associated with Kreider-Reisner Co., Inc., of Hagerstown, Md., and will give his services exclusively to that company. Mr. Seiler has joined the company in the capacity of chief engineer and production manager.

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the heating considerations help in these planes for at any rate Oct. 6, 7 and 8, which will formally dedicate the field. Since the field is to be used for the first time in the history of Air Transport and the Englishmen agents have look over a field as the expansion grounds and were able to plan in at a day play which extended a good deal of attention.

The second figure in the display was the Englishmen plane which made a nonstop flight from London to Paris by means of a small platform on one wing of the fuselage which carries the main engine. A steady stream of spectators passed up the steps during the long part of the day, it was reported, attending the show.

The English agent under the supervision of B. A. Peckett, Englishman owner of the company, did a regular business in selling free souvenirs post cards and selling air mail stamps. The idea was reported to have been very successful and about 500 pieces of mail matter were despatched daily from the temporary air mail station on the spot. Peckett had a way in the United States of existence with the air mail post office and was able to help his customers consider the route their mail would take.

The mail was deposited in a large mail box and sent over to Springfield each day in time for the train to Marshall where the last air mail is transferred to the planes. A big drama was experienced the first two days of the exhibition when the American collectors sent their airmail cards. The airmail stamp was considered particularly valuable by them, it was said.

Two B. B. T. postmen were placed in one corner of the tent. The cushioned seats turned at night and extended much attention. The officer was a 200 dog handling flood light. Another exhibit was of metal properties.

The airport committee recently appointed by the city council to consider the matter of construction of a regional airport made a tour of the three local Kansas fields here-

Major Paulin C. Parker made the rounds with the group and expressed considerable interest in the discussion of the project.

The definite purpose of the group as to the best location could not be determined, but it was suggested that Shaw Field at Lawrence, now being used by the Springfield Airfield, was the logical choice. The other fields inspected were the Agnew Field where the Englishmen planes are now operating and the East Lawrence Field which has received the commendation of Army men in the past.

### Kansas City Airport



An aerial photograph of the new Kansas City airport, showing the two runway strips completed.



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## UNITED STATES AIR FORCES

### Air Corps Laboratories Open Oct. 12

The new home of the Army Air Corps Laboratories, near Dayton, Ohio, will be officially opened Oct. 12.

Wor. Brigadier General E. D. White, the officer in command, represents the Air Corps of the U. S. Army. The Corps of Engineers, which is in charge of the construction of the aircraft industry, of expanded labor and standards of resonance will attend the ceremonies which mark further expansion of the efforts of the government to improve airplane designs, to increase efficiency of airplane engines and to perfect fire navigation and equipment.

Dr. W. E. Parsons, of Fordbridge Field, N. H., will go to Dayton to participate in the dedication ceremonies, as will Wright Field on the morning of Oct. 12.

The Army Air Corps Laboratory, known locally as the material division, is the birthplace of many improvements in airplane operation and use of aircraft.

Until recently the home of the material division was at McCook Field, Dayton, Ohio, but the new laboratory will be under command of that city at a 4500 acre site. Not far from the modern hangars and latest types hangars—which front as it is believed to be one of the finest landing fields in the world, stands the humble little shack in which the Wright Brothers, after whom the field is named, housed their first airplane. The site was decided to the War Department last June, Air Corps engineers prepared by the Bureau of Air Service Commission made up of members of Division. The formal presentation made at the opening of Division on Oct. 12.

The laboratory building is a single room structure, has 144,800 sq. ft. of open floor space and houses the engineering laboratories. The arrangement affords greatest coordination

of the various research activities and promotes an efficiency of operation impossible under conditions at the old site, where the laboratories had a sparsely growth over a period of years, the buildings being placed as suitable space dictated, rather than from a consideration of convenience and economy of operation.

The new dynamometer laboratory takes into consideration the new testing features of modern aircraft engines developing more than 10,000 horsepower and larger in size. The facilities for testing have been increased about fifty per cent and the larger dynamometers will be capable of absorbing 1500 hp. in a single unit. An interesting feature of the dynamometer laboratory is a blower system in the basement for the effects of the government to improve airplane designs, to increase efficiency of airplane engines and to perfect fire navigation and equipment.

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Another interesting apparatus measures the performance of engines at simulated altitudes. That is, the air entering a specific carburetor will be simulated so that the volume and temperature of the air can be definitely measured and maintained and temperatures as low as 80 deg. below zero can be obtained. A interesting device which measures the flow demanded by the carburetor under any condition is another feature.

The propeller test rig is probably the most important propeller laboratory in the world and the only one of its kind in this country. It consists of three dynamometers or fans arranged so that the propellers from one propeller will be turned into the range of the other, so that the latter can be used to simulate flight conditions. One of the three stands is equipped with a high speed turbo-type synchronous engine capable of turning at a speed up to 4700 rpm. This engine will develop 2500 hp. Electrons current at 33,000 volts is used for

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